CITY OF FRAMINGHAM
CAPITAL PROJECT/EQUIPMENT REQUEST - FY2025-2034 CIP

DEPARTMENT: Fire   **DEPARTMENT PRIORITY:**

(1) PROJECT NAME: Wireless Fire Alarm Master Box Conversion

PROJECT STATUS: NEW Project This Year

(2) PROJECT DESCRIPTION AND JUSTIFICATION:

The current City-wide Fire Alarm Master Box system is run over a city-owned obsolete overhead and underground cable system. City personnel are employed/assigned full time to physically maintain this system. The system does provide direct and instant fire alarm notification to the Fire Department for City assets and vulnerable populations/assets (hospital, elderly housing, group homes, high-rise apartments, cellular switching stations, etc.). Private monitoring companies cannot match the reliability and speed of a City Master Box system. Current technologies exist to run this system over a grid of wireless radio transmitters and receivers. The advantage of the wireless Master Box system is that a majority of the infrastructure would become privately owned/maintained and there would no longer be miles of overhead and underground cables for the City to maintain. The necessary receiving equipment at Fire Dispatch is estimated to cost $200,000. There are approximately 50 City-owned buildings that would need a wireless transmitter installed to replace their existing hard-wired Master Box. Vendors estimate a cost of approximately $15,000 per building for these installations. This work would need to go through the procurement process, but is estimated at $750,000 = $15,000 x 50 buildings. Once established, it is anticipated that one-time financial grants may be necessary to get non-profits to convert their fire alarms - churches, housing authority, etc. If the City chose to fund such a program, an estimated $750,000 would fund approximately 50 buildings. Because of the grid technology, the more transmitters that exist throughout the City, the cheaper the installations at each building become - as the need to install an external antenna on the building goes away.

PROJECT ADDITIONS/CHANGES JUSTIFICATION:

(3) PURPOSE OF PROJECT:

X	Replace existing infrastructure
	Replace existing capital asset
	Replace existing vehicle
X	Replace equipment
	New infrastructure
	New capital asset
	New vehicle
	New equipment
	Strategic/Comprehensive/Master plan

(4) BUDGET REQUEST BY YEAR:

		FY 25	FY 26	FY 27	FY 28	FY 29	FY 30-34
a.	Land Acquisition						
b.	Planning / Feasibility						
c.	Design						
d.	Construction						
e.	Equipment/Vehicles	950,000	750,000				
f.	Contingency						
g.	Other						
	TOTAL	950,000	750,000	-	-	-	-

(5) PRIORITY:

a.	X	**health and safety**	safety concern, hazardous condition, agency compliance, non-functional, etc
b.		**level service maintenance**	maintains City desired level of service
c.		**economic development**	adds to the City's economic vibrancy
d.		**service improvement**	new or improved service to meet demand

(6) EFFECTS ON ANNUAL OPERATING BUDGET:

	FY 25	FY 26	FY 27	FY 28	FY 29	FY30	YEARS 30-34
Personnel		(70,000)	(70,000)	(70,000)	(70,000)	(70,000)	(70,000)
Operating		(50,000)	(50,000)	(50,000)	(50,000)	(50,000)	(50,000)

(7) PROPOSED FUNDING SOURCE(S):

1) **Bond**
2)
3)

(10) PROJECT OR EQUIPMENT LOCATION:

City-Wide

(11) ASSET TYPE:

Equipment

(7a) POTENTIAL GRANT FUNDING SOURCE IF APPLICABLE: (List source and matching requirements)

(8)	**PROJECT LEAD NAME & CONTACT INFO: (ADDITIONAL PROJECT INFO AS NEEDED)**
	Dana Haagensen 508-532-5955 dhr@framinghamma.gov
(9)	**FINANCE DEPARTMENT NOTES:**

R.B. Allen Co., Inc.
SINCE 1966

NE 1-800-258-7264
FAX (603) 964-8885

P.O. Box 770
131 Lafayette Rd.
No. Hampton, NH 03062
(603) 964-8140

City of Framingham Massachusetts - Fire Department

Proposal for New Digitize Form Four Telegraph Equipment
Additional Networked Equipment for New Dispatch Location
Options for AES Wireless Receiving System
February 24, 2023

![R.B. Allen Co., Inc. logo — SINCE 1966]

NE 1-800-258-7264
FAX (603) 964-8885

P.O. Box 770
131 Lafayette Rd.
No. Hampton, NH 03062
(603) 964-8140

February 24, 2023

To: Framingham Fire Department
        10 Loring Drive
        Framingham, MA 01702

Attn: Dana Haagensen | Director of Administration & Finance

Re: Budgetary Quote for: Upgrade Existing Digitize Form Four Telegraph Equipment
                AES Wireless Mesh Alarm Receiving System

R. B. Allen Co., Inc. is pleased to provide for budgetary purposes, a quote for equipment and services for the project referenced above to include the following:

- 1055 Worcester Rd. Equipment:
    - (2) Digitize PrismLX Units with Existing Options & Battery Backup
    - (20) New Form Four Box Circuit Cards
    - (1) New Form Four Common Card
    - Technician Configuration, Programming, Testing and Training

- New Dispatch Location Equipment
    - (2) Digitize PrismLX Units with Battery Backup
    - (1) D-Lan Option with Standalone Remote Annunciator
    - Technician Configuration, Programming, Testing and Training

- AES Multinet Wireless Mesh Receiving System with Two Base Station Antennas
    - Propagation Testing to Ensure Network Viability

The cost to the Framingham Fire Department shall be $300,733.30. A detailed cost breakdown is also included for reference and potential modification requests.

We look forward to working with the Framingham Fire Department to ensure a smooth transition to the new system and minimize any disruption to dispatch operations. Please feel free to contact me at any of the means listed below regarding this proposal.

Thank You,

Jeffrey R. Parent
Office: 800-258-7264 x122
Direct: 603-964-8183
Cell: 603-234-6937
Email: jparent@rballen.com

PrismLX - Options - 1055 Worcester Rd.

Qty	Part#	Description	Unit Price	Extended
2	425230-0001	SYSTEM 3505 Prism LX™ With USB KEYBOARD	$20,999.00	$41,998.00
2	425203-0001	SEBB-6/24, SUPERVISED 24 Volt Charger W/ LCD DISPLAY with Batteries	$2,995.00	$5,990.00
2	010001-0019	TCI-20, 20 CKT TELG DECODE	$5,795.00	$11,590.00
2	010001-0013	SST MANUAL CODE TRANSMITTER	$3,995.00	$7,990.00
2	000001-0046	SYSTEM 3505 PRISM LX TO SPECTRACOM NET CLOCK INTERFACE, VIA RS-485	$3,995.00	$7,990.00
2	000001-0010	ALL-OUT OPTION	$1,595.00	$3,190.00
1	000001-0013	TPO-4, TIME AUTO-TRANSMIT	$1,795.00	$1,795.00
1	010001-0179	Mini-AlarmLan Option for first 2 Systems	$9,995.00	$9,995.00
		Subtotal		**$90,538.00**

Form Four - 1055 Worcester Rd.

Qty	Part#	Description	Unit Price	Extended
0	450205-0001	FCR-4, 10 CKT CARD CAGE W/METER	$5,699.00	$0.00
0	450205-0002	FCR-4-EXP 10 CKT EXPANSION	$4,995.00	$0.00
20	400320-0000	FBX -4 FORM 4 BOX CARD	$3,995.00	$79,900.00
1	400077-0001	FCM-4 COMMON CARD	$3,995.00	$3,995.00
0	400332-0000	100 MA PCB (for TCI-6/20)	$300.00	$0.00
0	400334-0000	24 VDC PCB (for TCI-6/20)	$300.00	$0.00
0		Misc Wiring & Supplies	$2,000.00	$0.00
		Subtotal		**$83,895.00**

PrismLX - Options - New Dispatch Location

Qty	Part#	Description	Unit Price	Extended
2	425230-0001	SYSTEM 3505 Prism LX™ With USB KEYBOARD	$20,999.00	$41,998.00
2	425203-0001	SEBB-6/24, SUPERVISED 24 Volt Charger W/ LCD DISPLAY with Batteries - Optional	$2,995.00	$5,990.00
2	010001-0178	Mini-AlarmLan Option Each Additional	$4,595.00	$9,190.00
2	000001-0030	SLEEP MODE Option	$1,900.00	$3,800.00
		Subtotal		**$60,978.00**

Remote Annunciators - New Dispatch Location

Qty	Part#	Description	Unit Price	Extended
1	425207-0007	23.8 Inch COMMERCIAL GRADE REMOTE ANNUNCIATOR, With SIPPDD 10, D-LAN Option and Key	$15,495.00	$15,495.00
0	425207-0008	ADDITIONAL 23.8-Inch REMOTE ANNUNCIATOR, TOUCH SCREEN DISPLAY AND DESKTOP STAND	$12,495.00	$0.00
0	010001-0143	REMOTE ANNUNCIATOR SOFTWARE, Program, Key and D-LAN Option	$11,995.00	$0.00
0	010001-0010	ADDITIONAL REMOTE ANNUNCIATOR SOFTWARE, Program and Key only	$8,495.00	$0.00
		Subtotal		**$15,495.00**

AES Multinet Wireless Mesh - New Dispatch Location

Qty	Part#	Description	Unit Price	Extended
1	7707ii	AES Multinet 2.0 Wireless Mesh Receiving System with Two Base Station Antennas - Installed	$44,000.00	$44,000.00
2	010001-0151	System 3505 PRISM LX INTERFACE to AES MultiNet - AES system can interface to one or both PrismLX units for redundancy	$8,795.00	$17,590.00
1	Propagation	RF Propagation Testing to Verify Network Viability	$8,500.00	$8,500.00
		Subtotal		**$70,090.00**

EQUIPMENT LIST		**$320,996.00**
Discount 10%		**-$27,762.70**
EQUIPMENT TOTAL		**$293,233.30**

INSTALLATION

Qty		Description	Unit Price	Extended
5	Installation	Days Labor - Technician Installation, Programming, Testing and Training	$1,500.00	$7,500.00
		If replacing additional Form Four hardware such as Card Cages and PCBs that require additional wiring, additional days labor may be required.		
		GRAND TOTAL		**$300,733.30**

First…When seconds count! ™

SYSTEM 3505 PRISM LX™
ADVANCED ALARM MONITORING SYSTEM

Features

- **NEW!** **1 GHz** Fast **Dual Core** Cortex A7 ARM Processor – actually has two ARM processors sharing the work load at the same time.

- **NEW!** **Multitasking** Linux operating system**.**

- **NEW!** 4 Gigabytes of user memory – No longer requires MEM600 chips.

- **NEW!** Informative 5.7" **Color** LCD Display with wide angle viewing, very bright!

- On line programmable.

- Low Power – Very efficient, no fans.

- **Graphic Thermal Printer** provides continuous hard copy printout.

- External USB Keyboard for user text entry and System setup. Text can be edited via the WIN3505 application and the output file uploaded via the system's built in WEB browser without interrupting the operation of the Prism LX.

- Operates in a **Standalone mode**, or can be part of a **LAN / WAN** of other Prism LX units via the **AlarmLan** option.

- 8 levels of Alarm Priority, 4 are user programmable.

- Multiple communication protocols utilizing Ethernet, RS-232, RS-485, Radio, & MM/SM Fiber. Configurations are based upon installed options.

- Extensive programmable sound & volume combinations through the internal sound generator.

- System operation is **supervised**. Internal monitor activates an audible alert in the event of an internal malfunction.

- **Customizable** – Operation can be modified for user specific applications.

- **ETL & CSFM Listed**

System 3505 Prism LX™ Monitoring System

System Description

The System 3505 Prism LX™ is a highly integrated alarm monitoring system that uses state-of-the-art components and circuitry to continuously monitor and display the status of all connected alarms. When an alarm condition occurs, the System 3505 Prism LX™ presents it to the operating personnel via a programmable audible alarm, color graphic display and a permanent printed record on the thermal paper tape. The System 3505 Prism LX™ can monitor up to 500 active alarm points simultaneously, and in any combination of multiplex, telegraph / McCullough codes, direct-wire, digital dialer, network, polling radio, and serial input alarm signals, as well as Ethernet utilizing the AlarmLan. Options can be tailored to your installation's precise needs.

The System 3505 Prism LX™ monitors three alarm categories: Zone, Dialer, and Box. The **AlarmLan** option now allows zone inputs to be monitored via Ethernet. Direct wire zone inputs are monitored via EOL or RPI input cards. Remote zone inputs are monitored via Data Gathering Panels / Muxpads. The DGM Panel / Muxpads can communicate with the Prism LX via Ethernet, RS-232, RS-485, Poling Radio and MM/SM Fiber. Dialers are monitored via Digitize DDI-11e Dialer Receiver. Box alarms are monitored via telegraph / McCullough coded boxes or 1221 Radio interface card.

The SYSTEM 3505 Prism LX™ can store 30,000 screens of user programmable. All user data is maintained in the event of a power failure, including the loss of battery backup. Editing user memory can be performed with an external USB keyboard, with the WIN3505 software and uploaded to any System 3505 Prism LX™ unit via its built WEB browser in a second or two while the Prism LX is still monitoring events. Relay control is available to control fans, doors, and output modules. Programmable point output controls up to 2,048 output points, either remotely or at the System 3505 Prism LX™ location.

Software Support - The encrypted Prism LX Software updates are available on the Digitize WEB site to users with active software support agreements. Updates include any changes to the Linux system as well as the Prism LX and install via the built in WEB browser.

Phone Tethering - The Prism LX supports Smart Phone Tethering. When connected and set to USB tethering, the Prims LX unit will "Phone home" and the Prism will beep twice to confirm the Ethernet connection to the Digitize Engineering server. Once connected, Digitize can update the operating program remotely as well as add any purchased options, check memory structure, review your setup file (.EE3 file), add support years, and download your diagnostic data, etc.

Applications - Used as a standalone unit or connected in a network of multiple 3505's, the System 3505 Prism LX™ is designed for fire alarm reporting, security alarm monitoring and building management. A dedicated proprietary alarm monitoring system, the System 3505 Prism LX™ has been expressly developed for single ownership applications, such as universities, military bases, municipalities, hospitals, industrial complexes, and other multi-building campus facilities.

DIMENSIONS: *Height*: 6.97 in. (17.7 cm); *Width*: 19.0 in. (48.3 cm); *Depth*: 15.5 in. (39.5 cm)

WEIGHT (approximate): *Net Weight*: 21.3 lbs. (9.7 Kg); *Shipping Weight*: 25.0 lbs. (11.38 Kg)

ENVIRONMENT: *Operating Temperature*: 32 to 120° F (0 to 49° C); *Storage Temperature*: 14 to 158° F (-10 to 70° C); *Operating Humidity*: 0 to 85% (non-condensing); *Storage Humidity*: 0 to 85% (non-condensing)

CPU: 1 GHz Dual Core Cortex A7 ARM Processor

MEMORY: 1 Gigabyte Ram; 4 Gigabytes On Board Flash; 32 Gigabytes External Flash on removable MicroSD memory card. Provides for over 30,000 screens of alarm information.

DISPLAY: *Resolution*: 640 x 480 pixels, VGA; *Viewing Area*: 5 in. x 3.87 in.; *Panel Type*: a-Si TFT-LCD LED Backlit; *Colors*: 262K (6 bit)

THERMAL PRINTER: *Print speed*: 75mm/s; *Roll Size*: 3 1/8 in. W x 220 ft. L; *Print Image*: Black (based on paper used); *Capacity*: 1500 Alarms per roll

FUSES: *AC Line Input Fuse*: 3.0 Amp (fast blow)

POWER: *Primary AC Power Input*: 90 to 240 VAC; *AC Power Consumption*: 100 Watts (max.); *Frequency Input*: 47-63 Hertz *Standby DC Power Input*: 24 VDC (nom.); *DC Operating Current*: 1.5 Ampere DC (max.)

OUTPUTS: *Audio Out*: Line level output (1 Volt P-P) for connection to an external amplifier or PA system; *SST Fast*: Normally open/closed dry contacts used for special options; *SST Slow*: Normally open and normally closed "dry" relay contacts used for special options. *ALARM*: Energized based on SET MENU selection; *TROUBLE*: Normally energized when System operates properly; *SUP*: Energized based on special options; *POWER 1&2*: To power additional Digitize equipment

**INPUTS:** *AC Power*: Detachable Cord; *Standby Battery*: 24 Volts DC (Typically connected to SEBB-LCD Backup charger); *Remote Inputs*: "Telegraph Coded Input" option; *EXT Inputs 1-6*: EXT 4, 5, and 6 are supervised; *CHARGER Fail Supe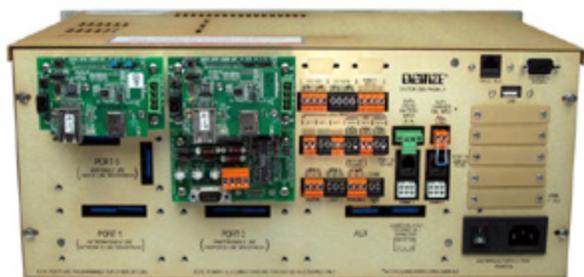rvised Charger Fail Input*. (Not needed with SEBB-LCD); *Ethernet*: Built in Ethernet port for managing firmware and user memory; *USB Ports:* 3 USB Ports, one on front panel, one on rear panel, for connection to USB keyboard. The third port (located inside printer door) allows field service technicians to tether to the 3505 for field updates and servicing.

APPLICABLE PUBLICATIONS: FCC Rules and Regulations, Part 15; National Electric Code; NFPA 72 (Proprietary and Central Station)
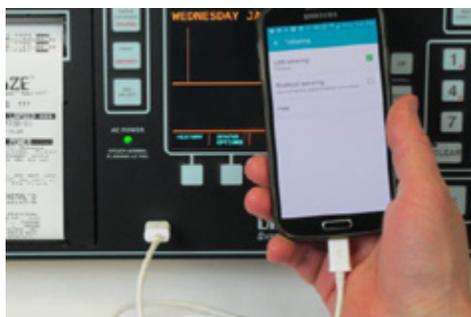
System 3505 Prism LX™ demonstrating Phone Tethering connection to Smart Phone via USB.

System 3505 Prism LX™ Enhancements

Remote Annunciator offers an interactive audio/visual display of System 3505 Prism LX™ activity at remote locations. Multiple Remote Annunciators can be added to the system, distributing filtered information to many locations. Remote Annunciator options include automatic Text-2-Cell & E-mail notification. See Cut sheet 750581.

Digitize AlarmLan™ option allows the System 3505 Prism LX™ to communicate with equipment practically anywhere in the world via Ethernet. Multiple Prism LX units can be connected in a LAN / WAN configuration and each Prism LX unit becomes an Alarm Server.

Test Mode Option masks user specified alarms by alarm point, groups of alarm points, or buildings, for a user specified time not to exceed 8 hours.

Partial List of Optional Interfaces

Clients interested in the System 3505 Prism LX™ are often interested in the following optional products:

Solid State Telegraph ▪ Radio Box 1221 ▪ Remote Annunciator ▪ SIPPDD Card ▪ DET Electronic Transmitters ▪ DGMs
Text-2-Cell ▪ SDS/Desplex ▪ Multiplex ▪ CGRMS (Cad system) ▪ Digitize AlarmLAN™ and DataLAN™ Protocol
Digitize MeshSentry Network ▪ Network Systems ▪ Intellitize ▪ Digital Alarm Receiver ▪ Micromux
Mesh Radio Communications ▪ Muxpad II ▪ Digitize SST

System 3505 Prism LX™ Rear Panel (Optional Cards Shown)

DIGITIZE®

First…When seconds count! ™

FORM FOUR

Features

- Provides Power, Supervision & Control for 100 mA Municipal Telegraph Boxes (optional 60 mA operation, P/N 400320-0002)

- Energy Efficient, Switching Power Supply

- Type A, B, or A/B Programmable

- LED Meter Displays Current, Voltage & Leakage Readings

- Common Card Provides Supervision and Ground Return Control

- Box Card Supplies Supervisory and Control Logic

- Alarm Card Powers and Supervises Box Circuits up to 10 Cards per Rack, Expanded by adding Expansion Card Cages

- NFPA 72 Compliant

Form Four Box Card

Product Information

The Digitize Form Four is a power regulator that provides power, supervision and control for 100 mA telegraph boxes. The Form Four prevents excessive generation of heat which could damage circuitry and reduce the life of the equipment. The Card Cage provides the

Complete 10 Ckt. Form Four Card Cage

housing for one common card, and up to 10 Box or Alarm cards in any combination.

The Form Four Box Card supplies supervisory and control logic for repeating alarms to bell or recording circuits. It also automatically provides ground return capability for the reception of alarms from "Three Fold" type fire alarm boxes in the in the event of an open circuit.

The Alarm Card powers and supervises box circuits. A Common Card monitors the operation of the system. All abnormal conditions are indicated via visual and audible alarms. Power breaks, a missing card, and low or high line current are examples of situations that will activate the audible alarm. This card also has the ability to supervise the AC input of an external battery charger eliminator as well as the DC output from the battery.

The switching power supply enables the Form Four to convert the station power source to the required operating voltage efficiently. The Form Four operates from a 24-Volt DC power source.

A digital LED meter, mounted to the front panel, provides accurate voltage and current measurements on the line circuits. Voltage from line-to-ground and line-to-line can also be measured. The meter is common to all line circuits through push buttons and has a battery backup.

Each Box or Alarm card continuously monitors for proper line current. Under normal conditions, all box alarms are received from closed series circuits. Short circuit protection by switching power supply is used in all box and alarm circuits as well as automatic or manual line current regulation (switch selectable). If a break occurs in a box circuit, automatic conditioning to ground return mode is provided (on Box card only).

ORDER UNIT: See Form Four Ordering Guide   Cut-Sheet P/N 750138-0001 Rev. K 10/21
Specifications Subject to Change Without Notice

Page 6 of 15

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Modular Box and Alarm cards are programmable (via programming plug) for Type A, Type B or Type A/B operation. For Type B cards, fire alarm codes from a box circuit are automatically and simultaneously repeated into the other box and alarm circuits.

Specifications

CARD CAGE DIMENSIONS LINE CIRCUIT
- Height -.75 in.
- Width-19.0 in.
- Depth-10.5 in.

FORM FOUR AC PANEL DIMENSIONS
- Height -3.5 in.
- Width-9.0 in
- Depth-10.5 in.

OPERATING ENVIRONMENTAL RANGE
- 30°-120° degrees F (0°-49° degrees C)
- 90% relative humidity, non-condensing maximum

POWER REQUIRED
- DC Input - 20.5 VDC to 28.5 VDC at 7.5 amps max.
- DC Fuses: - Circuit supply buss, 10 amps
  - Recorder Power Buss, 10 amps
  - Control Power Buss, 2 amps
  - DC Converter Primary, 1 amp

LINE POWER SOURCE
- Switching power supply: 1 per box card or alarm card
- Output current: 100 milliamps DC
- Output voltage: 130 VDC max. open circuit; nominal 0 to 110 VDC

LINE CIRCUIT
- Minimum Operating Line Circuit- 50 mA
- Resistance- 1000 Ohms maximum
- External line equipment connections through ¼ in. front panel telephone jack

CIRCUIT ALARMS
- Line trouble, power problems, ground return mode.
- Trouble Alarm Adjustable Delay – 15-180 seconds.

INPUT ALARMS
- One per card, activated by nominal 24 VDC at 40 milliamps maximum
- Automatic grounded reception of alarms from open circuits, manual reset to normal
- Convert to ground return delay, adjustable 2-45 seconds

OUTPUT FUNCTIONS
- Can be used as a satellite station for a master
- Line Recorder Output per Card   -24 VDC, 1 amp
- Master Recorder Output per Card - 24 VDC, 1 amp

EXTERNAL CONNECTIONS
May be connected to battery charger/eliminator with or without an external battery.

Form Four Ordering Guide:

450205-0001- FCR4, 10 CKT Card Cage with meter
450205-1002- FCR4-EXP, 10 CKT Expansion
400320-0000- FBX4, Form Four Box Card
400320-0003- FAL-4 Form 4 Alarm Card
400320-0003- FCM4, Common Card
400077-0001- FEX4, Extender Card
900481-xxxx- Engraved Keycaps (xxx indicates type)
400320-xxxx- FBX4, Form Four Box Card for 60 mA operation
Allows operation with 2,500 Ohm line resistance

Box/Alarm Card

Next Generation Central Station Receiver
The 7705ii AES-*MultiNet*

Technical Specifications

DIMENSIONS
Standard 2U 19" rack enclosure configuration 19" W x 3.5" H x 12.24" D* (48 cm W x 8.8 cm H x 31.1cm D) *13.25" D (33.7 cm) including rack handles, minimum rack depth approximately 16" to allow for cables and connectors

WEIGHT
9 lbs (approximate), 4.0 kg

ENCRYPTION
AES 128 Bit

OPERATING SYSTEM
Linux

OPERATING VOLTAGE
120 VAC, 60 Hz. +/- 10%

OPERATING CURRENT
0.6 Amps

OPERATING TEMPERATURE RANGE
13° to 35° +/-2° C
(55° to 95° +/-3° F)

POWER CONSUMPTION
200 Watts Maximum

STORAGE TEMPERATURE RANGE
-10° to 60° C (4° to 140° F)

CERTIFICATIONS
UL & ULC, CSFM, NYFD Approved

Invest in your AES network with the powerful new next generation 7705ii AES-*MultiNet* Central Station Receiver, UL & ULC Approved.

HANDLES **10X** THE AMOUNT OF SIGNALS!

The new 7705ii Receiver provides higher security and a more responsive system due to an improved operating system and increased memory from 1GB to 4GB RAM.

The Solid State Drive makes it more reliable, durable, and requires fewer repairs.

With the Automatic Power Recovery feature, there's no need to manually restart your Receivers by pushing the power button after a power loss in order to boot. The new functionality allows the unit to automatically boot after a power loss.

Features

- Faster 1.6GHz Processor with 2MB Cache
- Upgraded Hard Drive SSD 256GB
- 4xUSB 3.0/8xUSB 2.0/ 2xSATA Port(6Gb/sec)
- Expanded Memory Dual-channel DDR4-2133
- New and Improved Linux Operating System
- Automatic Power Recovery

Benefits

- Improved Throughput
- Higher Storage Capacity
- Quicker Boot and Load Times
- Enhanced Security

Network Planning

It is important to note that the next-generation AES 7705ii receiver units do not pair with the first-generation AES 7705i units as primary, secondary, or backup units. However, the first-generation AES 7705i receiver units can still operate and be maintained on an existing network as long as its primary and secondary units are the same.

Our team is here for your team.

Our AES Support team of alarm industry experts are available **Monday through Friday from 8am to 8pm EST** and **24/7** for emergency IP Link and AES-*MultiNet* Receiver down situations. When in doubt or if you have any questions before you send your Field Technicians and Installers out onsite, start a live chat session via the Support Online button located on the lower right hand screen of our **aes-corp.com** website.

How to Order

Model Number	Description
7705II	AES-*MultiNet* Next Generation Central Station Receiver, Pair
7705IIS	AES-*MultiNet* Next Generation Central Station Receiver, Single Unit
7705II-C	AES-*MultiNet* Next Generation Central Station Receiver, Pair, Canadian Version
7705IIS-C	AES-*MultiNet* Next Generation Central Station Receiver, Single Unit, Canadian Version

About AES Corporation

AES Corporation is the leading manufacturer of long range wireless private mesh radio alarm communication products and services for fire and life safety applications. We've been in the business of protecting people and property for over 40 years, serving both commercial and residential security markets along with government agencies. AES-*IntelliNet* and *IntelliNet* 2.0 alarm monitoring equipment is deployed at over a hundred thousand locations worldwide.

No More Boundaries

7170 Remote IP Link Receiver

Technical Specifications

DIMENSIONS
15 in H x 13 in W x 7 in D
(38.1 cm H x 33.02 cm W
x 17.78 cm D)

WEIGHT
8.2 lb, 3.7 kg

POWER SUPPLY
110V

ETHERNET CONNECTION
RJ45
Connection - RJ11
Telephone Line Connection

BATTERY BACKUP
12V 10A HR Battery

OPERATING TEMPERATURE
0° to 50° C (32° to 122° F)

NETWORK CONNECTIVITY
TCP/IP Network

RF OPERATING FREQUENCY OPTIONS
UHF - 400-512 MHz
VHF - 150-174 MHz
Others Available

UL LISTINGS
UL 864 - Edition 9
UL 2050
UL 1610
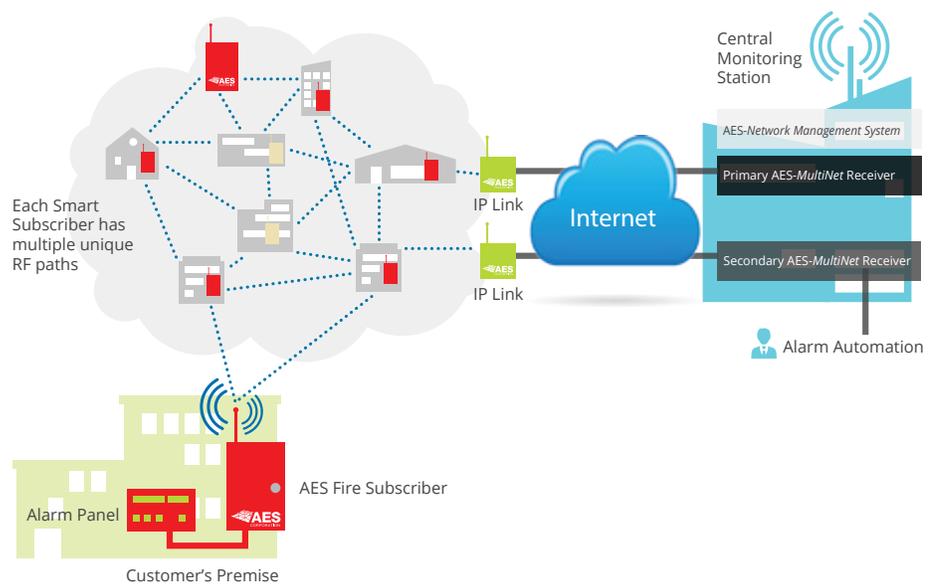UL 365

NFPA-72 COMPLIANT

Features

- Connect Multiple AES-*IntelliNet* Networks
- Expand AES-*IntelliNet* Wireless Network Capacity
- Wireless-to-Internet Alarm Transmission
- UL Listed
- NFPA-72 Compliant

Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographic area with a high level of reliability at a low Total Cost of Ownership (TCO).

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

Central Monitoring Station
AES-*Network Management System*
Primary AES-*MultiNet* Receiver
Secondary AES-*MultiNet* Receiver
Internet
IP Link
IP Link
Alarm Automation
Each Smart Subscriber has multiple unique RF paths
AES Fire Subscriber
Alarm Panel
Customer's Premise

About AES Corporation

AES Corporation is the leading manufacturer of code compliant wireless alarm communication products and solutions serving commercial security markets and government agencies worldwide.

AES-*IntelliNet*® patented technology will never sunset compared to obsoleting technologies such as cellular and traditional phone lines. AES private mesh radio networks are owner operated and controlled, providing infinite scalability and superior reliability with the fastest transmission speed available. Over a half million AES Smart Subscribers are installed worldwide. AES is the clear choice for life safety and security, protecting people and property for over 40 years.

Connects Multiple AES-*IntelliNet*® Radio Networks

A major component of the AES-*MultiNet* Transceiver System, the 7170 RF/IP Transceiver connects AES-*IntelliNet* radio networks to AES-*MultiNet* 7005i/ 7705i Servers, via the Internet. Adding AES 7170 Remote RF/IP Transceiver allows central stations to monitor one or more AES-*MultiNet* Radio networks from a single location anywhere on the globe!

- UL Listed and NFPA-72 compliant (2 AES 7170 Remote RF/IP Transceivers required by UL)
- Operator-owned network
- No monthly fees
- Universally expandable
- Full data or discreet zoning
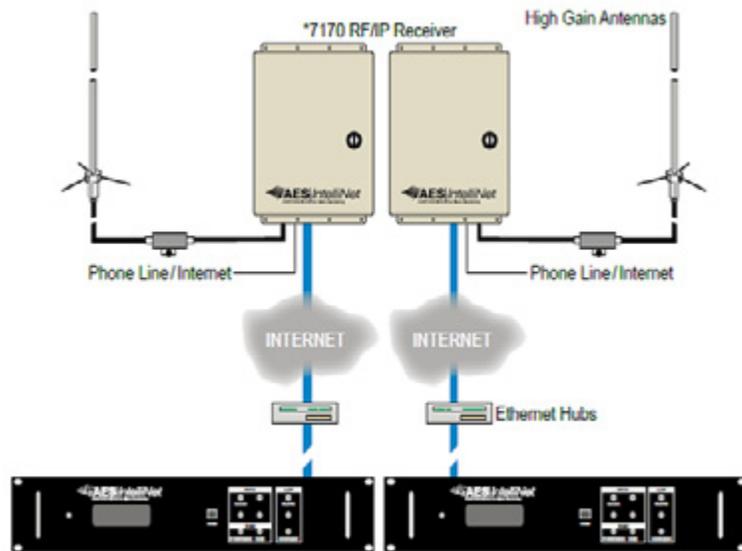
No More Boundaries

- Multi-region fire and security wireless alarm communications anywhere
- Large regional users of AES-*IntelliNet* networks can use the AES-*MultiNet* system to increase coverage

7707 Fire Subscribers

IntelliNet 2.0

A Newer, Smarter Alarm Communications Platform

Feature Highlights

- Leverages state of the art technology
- Applies advanced security protection
- Offers flexible power and configuration options
- Engineered for backward compatibility with legacy systems
- Enables future ready capabilities
- Provides instant subscriber status through front panel with Power and Trouble LEDs, a backlit LCD display, and Menu/Silence button
- Includes dual communication/multiple communication technology (reporting over RF and IP.
- Improves functionality with an adaptive Graphic User Interface (GUI) for programming via smartphones, tablets and PCs
- Plus many more...

Key Benefits

- Built upon the solid foundation of AES-*IntelliNet* patented mesh radio technology for use in private licensed wireless networks
- Protects subscriber units against unauthorized access and rogue activity with a password-protected Dealer Code
- Makes programming and streamlined troubleshooting easy with user friendly interface
- Adds integrated supervision of AES-*IntelliPro* full data module
- Provides versatile power options:
  (1) Direct from the Fire Alarm Control Panel (FACP) without requiring an electrician onsite and without Subscriber backup battery;
  (2) Directly from the FACP with Subscriber backup battery; or
  (3) Traditional installation with plug in Class 2 low power transformer
- Allows for enhancement upgrades and an expanded number of new features to be added easily with highly flexible and scalable alarm communications infrastructure
- Rigorously tested to the highest industry standards and future ready to meet emerging NFPA code and UL standards

Enhanced Wireless Fire Alarm Monitoring

Powered by AES enhanced mesh radio technology, *IntelliNet* 2.0 7707 Fire Subscribers are next generation universal wireless communicators that provide advanced security protection for any new or existing alarm monitoring network. The AES Model 7707 is ideal for commercial fire applications. With the AES-*IntelliPro* full data module option, they are the ideal drop-in replacement for Plain Old Telephone Service (POTS) lines.

The red metal enclosure comes with a key lock and front panel LCD backlit display with intuitive view that provides an instant visual of the subscriber status. The user friendly GUI makes it easy to program AES subscriber units via a smartphone, laptop, tablet, or integrated Universal Serial Bus (USB)—without the need for special cables or having to use a handheld programmer. Additional knockouts make it easier to mount for faster installation.

IntelliNet 2.0 Private Wireless Mesh Radio Network
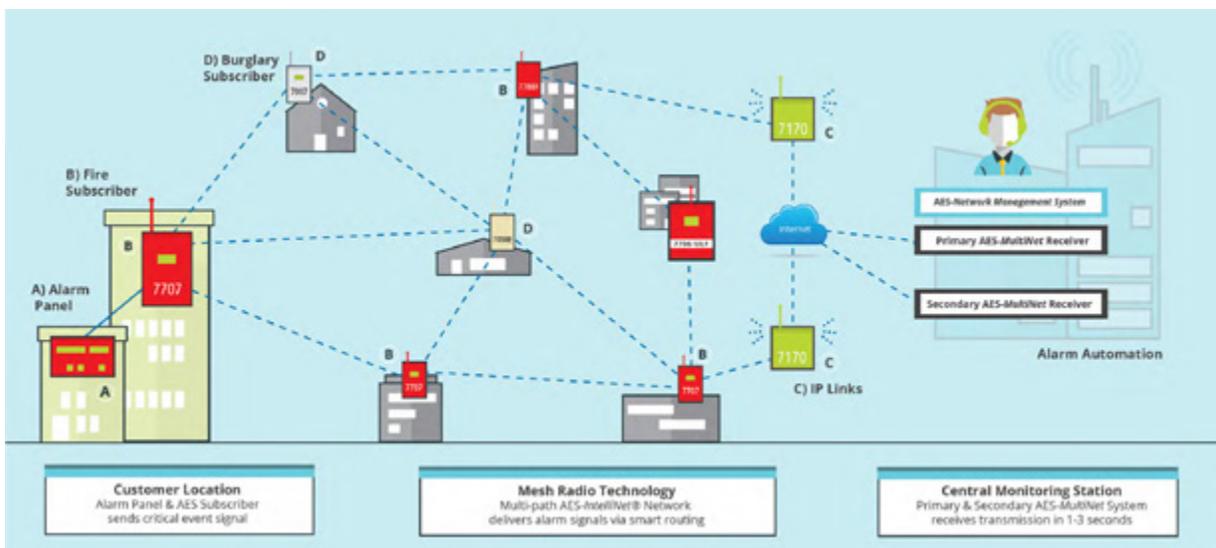
The *IntelliNet* 2.0 Fire Subscriber has an 8 Zone modular design for expansion with normal and reverse polarity, POTS and DACT interfaces with an option for the 7794A AES-*IntelliPro* full data module add-on accessory board. AES subscribers' intelligent software automatically detects new hardware and devices to reduce installation time.

An AES certified WiFi accessory allows seamless wireless connectivity for configuration and programming. A laptop, Ethernet cable, or a Wi-Fi USB dongle is required for *IntelliNet* 2.0 programming, handheld programmers will not work with 2.0 units. A FACP Power Supply Adapter is required for certain configurations when using flexible power options. The forward compatible design allows for feature add-ons, engineered to adapt seamlessly with future software upgrades as technology advances. *IntelliNet* 2.0 allows configuration cloning for faster installation time.

The AES 7707 was designed with quick configuration and installation in mind to make it easier for field technicians to get in, out, and on to the next install.

Visit our Fire Marshal Resources web page for official NFPA and UL Listings:
aes-corp.com/products/fire/fire-marshal-resources

IntelliNet **2.0 Fire Subscribers**	
2.0 PREMIUM (UL & ULC Listed)	
7707P-88-M	_IntelliNet_ 2.0 Fire Subscriber, 8 Zone with Multiple Communication Technologies (MCT), Red Enclosure
7707P-88-ULP-M	_IntelliNet_ 2.0 Fire Subscriber, 8 Zone with 7794A AES-_IntelliPro_, and integrated onboard Local Annunciator plus MCT, Red Enclosure
7707P-44-M	_IntelliNet_ 2.0 Fire Subscriber, 4x4 Zone (4 Reversing Polarity, 4 Supervised) with Multiple Communication Technologies (MCT), Red Enclosure
7707P-44-ULP-M	_IntelliNet_ 2.0 Fire Subscriber, 4x4 Zone (4 Reversing Polarity, 4 Supervised) with 7794A AES-_IntelliPro_, and integrated onboard Local Annunciator plus MCT, Red Enclosure
2.0 ACCESSORIES	
7794A	Standalone AES-_IntelliPro_ Fire full data module add-on accessory board with firmware for new _IntelliNet_ 2.0 units only, cannot be used in legacy units
77-WiFi	AES certified WiFi adapter
77-FACPA	FACP Power Supply Adapter for internal mount
77-FACPA-KIT	External installation hardware for 2-way Junction Box
Legacy **Fire Subscribers**	
7706-ULF	Integrated Fire Monitoring System, Red Enclosure
7788F-ULP-P	Legacy Fire Subscriber, 8 Zone with 7795 AES-_IntelliPro_ (7794 full data module, 7762 hardware supervisory module, and 7740 Local Annunciator), Red Enclosure
7788F-ULP	Legacy Fire Subscriber, 8 Zone, 8 Supervised Zones with 7794 AES-_IntelliPro_, Red Enclosure
7788F	Legacy Fire Subscriber, 8 Zone, 8 Supervised Zones, Red Enclosure
7744F-ULP-P	Legacy Fire Subscriber, 4 Zone with 7795 AES-_IntelliPro_ (7794 full data module, 7762 hardware supervisory module, and 7740 Local Annunciator), Red Enclosure
7744F-ULP	Legacy Fire Subscriber, 4x4 Zone, 4 Supervised Zones with 7794 AES-_IntelliPro_, Red Enclosure
7744F	Legacy Fire Subscriber, 4x4 Zone, 4 Reversing Polarity, 4 Supervised Zones, Red Enclosure
LEGACY ACCESSORIES	
7794	Standalone AES-_IntelliPro_ Fire full data module add-on accessory board for legacy units only, please see 7794A above for _IntelliNet_ 2.0 version

DIMENSIONS
13"H x 8.5"W x 4.5"D
(33cmH x 21.5cmW x 11.4cmD)

WEIGHT
5.8 lbs (2.6 kilograms)
excluding battery
13 lbs (5.9 kilograms) with
10 Ah battery

RADIO FREQUENCY
Standard Frequency Range:
450-470 MHz
Contact AES for other UHF
and VHF frequencies

ANTENNA
2.5 dB tamper resistant antenna
included, mounts on enclosure
Optional remote mounting
antenna available

POWER INPUT
AC SOURCES
Transformer: Class 2
16.5V AC nominal output
1.9 A max current (40 VA MIN)
ELK ELK-TRG1640,
MG ELECTRONIC SALES MGT1640,
or AES 1640 (not included)
DC SOURCES (includes FACP)
24V DC Regulated Power Supply
with Subscriber
Rechargeable Battery
1.9 A max current

BACKUP BATTERY
10-12 Ah, UL recognized lead acid
gel cell, size based on subscriber
configuration

ALARM SIGNAL INPUTS/ZONES
· 8 individually programmable
  E.O.L. type zone inputs
· 4+4: 4 reverse polarity input and
  4 individually programmable
  E.O.L. type zone inputs
· Optional 7794A AES-*IntelliPro* for
  full data via Contact ID, Pulse,
  Modem IIe and Modem IIIa2

UL LISTINGS
UL 864 10th Edition
Standard for Control Units and
Accessories for Fire Alarm Systems
ULC S559-04 1st Edition
Equipment for Fire Signal
Receiving Centres and Systems

TROUBLE OUTPUT—ACK DELAY/ANTENNA CUT
Form C relay, fail secure, rated 24V
DC 1A resistive, unsupervised

RESET BUTTON
Located on main circuit board

OPERATING TEMPERATURE
32 to 120°F (0 to 49°C)

STORAGE TEMPERATURE
14 to 140°F (-10 to 60°C)

RELATIVE HUMIDITY
0 to 93%, non-condensing

RECHARGE CAPABILITY
Will charge 12V battery size
from 10-12 Ah

PORTS
Ethernet for configuration
and message communication
USB access for software upgrade

REMOTE ANNUNCIATOR
AES Model 7740
Remote Annunciator, supervised

COMPATIBLE RECEIVERS
7705i AES-MultiNet Receiver

CONFIGURATION INTERFACE
Web browser capable device
accessible via smartphone, tablet,
laptop, or PC

CURRENT CONSUMPTION
Standby w/ charged backup battery:
200 mA (1.2 A Transmitting)
Standby + charging backup battery:
900 mA (1.9 A Transmitting - MAX)

POWER OUTPUT
2 or 5 Watts
Factory set

ENCLOSURE MATERIAL
Steel with paint finish

FINISH COLOR
Red

VISUAL INDICATORS
Front panel LCD
(2 x 20 alphanumeric character
backlit display)
Power and Trouble LEDs
(ALM, Trouble, Tx, Rx, WA)

Contact Us

For pricing and availability or to learn more about *IntelliNet* 2.0, please call your local
AES Sales Representative at (800) 237-6387 or email sales@aes-corp.com.

CITY OF FRAMINGHAM
CAPITAL PROJECT/EQUIPMENT REQUEST - FY2025-2034 CIP

DEPARTMENT:	Fire	DEPARTMENT PRIORITY:	4

(1)	PROJECT NAME:	GRANT - Emergency Operations Center (EOC)
	PROJECT STATUS:	Project in process

(2) PROJECT DESCRIPTION AND JUSTIFICATION:

The project serves to establish an Emergency Operations Center (EOC) at Fire Headquarters, which is co-located with cooking, sanitation, and dormatory facilities for long duration events. The EOC would share space with the Fire Department's Captain John F. Castanza Training room, and utilize technology resources that serve both training and EOC purposes. When the EOC is active, there would not be a need to use the room for training purposes. This project includes minor facility upgrades, minor utility upgrades, furniture purchases, and video/computer/presentation technology purchases.

PROJECT ADDITIONS/CHANGES JUSTIFICATION:

State Grant.

(3) PURPOSE OF PROJECT:

	Replace existing infrastructure
	Replace existing capital asset
	Replace existing vehicle
	Replace equipment
	New infrastructure
	New capital asset
	New vehicle
X	New equipment
	Strategic/Comprehensive/Master plan

(4) BUDGET REQUEST BY YEAR:

		FY 25	FY 26	FY 27	FY 28	FY 29	FY 30-34
a.	Land Acquisition	-	-	-	-	-	
b.	Planning / Feasibility	-	-	-	-	-	
c.	Design	-	-	-	-	-	
d.	Construction	-	-	-	-	-	
e.	Equipment/Vehicles		-	-	-	-	
f.	Contingency	-	-	-	-	-	
g.	Other	1	-	-	-	-	
	TOTAL	1	-	-	-	-	-

(5) PRIORITY:

a.	X	health and safety	safety concern, hazardous condition, agency compliance, non-functional, etc
b.		level service maintenance	maintains City desired level of service
c.		economic development	adds to the City's economic vibrancy
d.	X	service improvement	new or improved service to meet demand

(6) EFFECTS ON ANNUAL OPERATING BUDGET:

	FY 25	FY 26	FY 27	FY 28	FY 29	FY30	YEARS 30-34
Personnel	-	-	-	-	-		
Operating	-	-	-	-	-		

(7) PROPOSED FUNDING SOURCE(S):

1)	Grants
2)	
3)	

(10) PROJECT OR EQUIPMENT LOCATION:

10 Loring Drive - Fire Headquarters

(11) ASSET TYPE:

Equipment

(7a) POTENTIAL GRANT FUNDING SOURCE IF APPLICABLE: (List source and matching requirements)

Annual MEME Emergency Management Performance Grants (EMPG) 100%. City must demonstrate it is spending the same amount in its Emergency Management budget as used in the grant (not needed to be in the same project)

(8) PROJECT LEAD NAME & CONTACT INFO: (ADDITIONAL PROJECT INFO AS NEEDED)

Dana Haagensen, 508-532-5955, drh@framinghamma.gov

(9) FINANCE DEPARTMENT NOTES:

Regional Dispatch E911 Grant - TBD - Grant Award Estimated to be 33,000 for the year

CITY OF FRAMINGHAM
CAPITAL PROJECT/EQUIPMENT REQUEST - FY2025-2034 CIP

DEPARTMENT: Fire

DEPARTMENT PRIORITY: 3

(1) PROJECT NAME: Grant-Special Operations Pickup Replacement

PROJECT STATUS: In Earlier CIP - Not in Edmunds

(2) PROJECT DESCRIPTION AND JUSTIFICATION:

The special operations pickup truck (H1) was originally purchased with mitigation funds from the MWRA Tunnel Project running undergroud through the Town/City. It can be used to tow the Tech Rescue trailer, Mass Disaster Unit trailer, UTV and boat trailers. The current H1 is a 1997 Ford F-350 Quad Cab Pickup truck that is Out of Service due to dangerous frame rust.

PROJECT ADDITIONS/CHANGES JUSTIFICATION:

This vehicle replacement was accelerated as the City was awarded a FEMA Assistance to Firefighters Grant (AFG) for this project.

(3) PURPOSE OF PROJECT:

	Replace existing infrastructure
	Replace existing capital asset
	Replace existing vehicle
X	Replace equipment
	New infrastructure
	New capital asset
	New vehicle
	New equipment
	Strategic/Comprehensive/Master plan

(4) BUDGET REQUEST BY YEAR:

		FY 25	FY 26	FY 27	FY 28	FY 29	FY 30-34
a.	Land Acquisition						
b.	Planning / Feasibility						
c.	Design						
d.	Construction						
e.	Equipment/Vehicles	1					
f.	Contingency						
g.	Other						
	TOTAL	1	-	-	-	-	-

(5) PRIORITY:

a.	X	health and safety	safety concern, hazardous condition, agency compliance, non-functional, etc
b.		level service maintenance	maintains City desired level of service
c.		economic development	adds to the City's economic vibrancy
d.		service improvement	new or improved service to meet demand

(6) EFFECTS ON ANNUAL OPERATING BUDGET:

	FY 25	FY 26	FY 27	FY 28	FY 29	FY30	YEARS 30-34
Personnel	-	-	-	-	-		
Operating	-	-	-	-	-		

(7) PROPOSED FUNDING SOURCE(S):

1) **Grants**
2) **Operating**
3)

(10) PROJECT OR EQUIPMENT LOCATION:

520 Concord Street - Fire Station #5

(11) ASSET TYPE:

Equipment

(7a) POTENTIAL GRANT FUNDING SOURCE IF APPLICABLE: (List source and matching requirements)

FEMA AFG, Grant 90% of project and City funds 10% of project

(8) PROJECT LEAD NAME & CONTACT INFO: (ADDITIONAL PROJECT INFO AS NEEDED)

Dana Haagensen, 508-532-5955, drg@framinghamma.gov

(9) FINANCE DEPARTMENT NOTES:

Grant was awarded for $68,789 with 10% ($6,878.9) coming from FY24 Fire Operating Budget. Ask Louise to see whether we should update Gravity and Spreadsheet.

CITY OF FRAMINGHAM
CAPITAL PROJECT/EQUIPMENT REQUEST - FY2025-2034 CIP

DEPARTMENT: Fire

DEPARTMENT PRIORITY:

(1) PROJECT NAME: Ladder 3 Fire Truck Replacement

PROJECT STATUS:

(2) PROJECT DESCRIPTION AND JUSTIFICATION:

Ladder 3 is a primary response fire aerial truck with pump. It gets firefighters, equipment, and ladders, to emergency incidents. While on scene at a fire, firefighters that are in the building with fire around them are relying on the aerial device to establish access to the building for rescues of trapped occupants, provide emergency escapes for firefighters that may become trapped in the burning buildings, and to access roofs to ventilate hot fire gases that put firefighters in danger. If the aerial truck were to breakdown, the firefighters would be in a life-threatening position. This project would address the need to get primary response fire trucks on a standardized replacement cycle. The Department finds that firefighter safety risks and maintenance costs accelerate when the apparatus have reached 10-12 years of service. Because of the higher cost associated with a truck meeting fire service standards, and that a majority of maintenance is performed by in-house certified Emergency Vehicle Technicians, the risks to firefighters with aging apparatus will typically outweigh maintenance/replacement cost analysis in the need to purchase a new truck. This project also includes the cost to equip the new truck with the required firefighter tools that a fire aerial truck needs to meet national fire service standards..

PROJECT ADDITIONS/CHANGES JUSTIFICATION:

(3) PURPOSE OF PROJECT:

	Replace existing infrastructure
	Replace existing capital asset
	Replace existing vehicle
x	Replace equipment
	New infrastructure
	New capital asset
	New vehicle
	New equipment
	Strategic/Comprehensive/Master plan

(4) BUDGET REQUEST BY YEAR:

		FY 25	FY 26	FY 27	FY 28	FY 29	FY 30-34
a.	Land Acquisition						
b.	Planning / Feasibility						
c.	Design						
d.	Construction						
e.	Equipment/Vehicles	1,800,000					
f.	Contingency						
g.	Other						
	TOTAL	1,800,000	-	-	-	-	-

(5) PRIORITY:

a.	x	**health and safety**	safety concern, hazardous condition, agency compliance, non-functional, etc
b.		**level service maintenance**	maintains City desired level of service
c.		**economic development**	adds to the City's economic vibrancy
d.		**service improvement**	new or improved service to meet demand

(6) EFFECTS ON ANNUAL OPERATING BUDGET:

	FY 25	FY 26	FY 27	FY 28	FY 29	FY30	YEARS 30-34
Personnel							
Operating	(5,000)	(5,000)	(5,000)				

(7) PROPOSED FUNDING SOURCE(S):

1) **Bond**

(10) PROJECT OR EQUIPMENT LOCATION:

10 Loring Drive Station 3 Headquarters

		(11) ASSET TYPE:
2)		Equipment/Vehicle
3)		

(7a) POTENTIAL GRANT FUNDING SOURCE IF APPLICABLE: (List source and matching requirements)

(8) PROJECT LEAD NAME & CONTACT INFO: (ADDITIONAL PROJECT INFO AS NEEDED)

Dana Haagensen 508-532-5955 dhr@framinghamma.gov

(9) FINANCE DEPARTMENT NOTES: